

WHAT IS CLAIMED IS:

1. A toxic substance containment and test system, comprising:
 - a fume hood comprising an air exhaust system and a toxic substance filter;
 - a containment compartment positioned within the fume hood, comprising an airtight seal, a pair of glove ports through which an operator can manipulate objects within the containment compartment, and an exit port for removing a test sample;
 - a source of a non-reactive gas coupled to the containment compartment to provide a stable atmosphere within;
 - an inline moisture trap coupled to the source of non-reactive gas to dry the non-reactive gas;
 - an ion neutralizer coupled to the source of non-reactive gas to reduce static charges within the containment compartment;
 - a staging area in the containment compartment for preparing the test sample;
 - a balance positioned within the containment compartment to measure the test sample;
 - a stanchion positioned within the fume hood for holding a test animal; and
 - decontaminating apparatus for cleaning up toxic substance residue.
2. The toxic substance containment and test system of claim 1 wherein the containment compartment comprises a glove bag.

3. The toxic substance containment and test system of claim 1 wherein the source of non-reactive gas comprises nitrogen.
4. The toxic substance containment and test system of claim 1 further comprising an air shield positioned in front of the exit port and the stanchion.
5. The toxic substance containment and test system of claim 1 wherein the decontaminating apparatus comprises a suction hose having an inlet and an outlet, the suction hose inlet positioned within the compartment and the suction hose outlet coupled to a toxic substance vacuum source.
6. The toxic substance containment and test system of claim 5 wherein the decontaminating apparatus further comprises a container of decontaminating solution coupled between the suction hose outlet and the toxic substance vacuum source.
7. The toxic substance containment and test system of claim 6 wherein the decontaminating solution comprises bleach.
8. The toxic substance containment and test system of claim 1 further comprising means to enhance the visibility of a substance under test.
9. The toxic substance containment and test system of claim 8 wherein the means to enhance the visibility of the substance under test comprises a source of illumination.

10. The toxic substance containment and test system of claim 8 wherein the source of illumination provides light at a wavelength to excite a fluorescent property of the substance under test.

11. The toxic substance containment and test system of claim 10 wherein the fluorescent property of the substance under test is induced by a fluorescent dye.

12. A patch for transdermal testing of toxic substances on an animal subject, comprising:

a first layer of flexible material comprising a top and a bottom to which an adhesive has been applied;

a second layer comprising a thin plastic stiffener and having a top and a bottom, the top of the second layer adhered to the bottom of the first layer;

a third layer comprising a soft fibrous material and having a top and a bottom, the top of the third layer adhered to the bottom of the second layer, and

a measured dose of toxic substance deposited to the adhesive surface on the top of the first layer.

13. The patch of claim 12, further comprising a protective cover dimensioned to prevent disturbance of the deposited measured dose of toxic substance when the test patch is moved.

14. A method for testing and containment of toxic substances, comprising:
- positioning a containment compartment within a vented fume hood;
 - infusing the containment compartment with a source of non-reactive gas;
 - filtering the source of non-reactive gas to remove moisture;
 - coupling an ion neutralizer to the source of non-reactive gas to reduce static charges within the containment compartment;
 - measuring a test amount of toxic substance;
 - preparing a test patch including the toxic substance within the containment compartment;
 - withdrawing the test patch from the containment compartment;
 - applying the test patch dermally to a test subject animal positioned in a stanchion within the vented fume hood;
 - neutralizing any toxic substance residue in the containment compartment; and
 - monitoring the test animal to determine the effect, if any, of application of the test amount of toxic substance.
15. The method of claim 14 wherein the containment compartment comprises a glove bag.
16. The method of claim 14 wherein neutralizing any toxic substance residue in the containment compartment comprises irradiation.

17. The method of claim 14 wherein neutralizing any toxic substance residue in the containment compartment comprises spraying the containment compartment with a decontaminant.

18. A toxic substance containment and test system, comprising:
means for venting and filtering toxic airborne particulate substances;
containment means comprising a sealed compartment and glove ports through which an operator can manipulate objects within the containment means;
means for providing a stable, non-reactive atmosphere within the containment means;
means for drying the stable, non-reactive atmosphere;
means for reducing static charges within the containment means;
means for preparing a sample under test within the containment means;
means for weighing a substance under test within the containment means;
means for restraining a test animal; and
means for neutralizing any toxic substance residue.

19. A toxic substance containment and test system, comprising:
a fume hood comprising an air exhaust system and a toxic substance filter;
a compartment positioned within the fume hood, comprising an airtight seal, a pair of glove ports through which an operator can manipulate objects within the compartment, and an exit port for removing a test sample;

a source of a non-reactive gas coupled to the compartment to provide a stable atmosphere within;

an inline moisture trap coupled to the source of non-reactive gas to dry the non-reactive gas;

an ion neutralizer coupled to the source of non-reactive gas to reduce static charges within the compartment;

a staging area in the compartment for preparing a sample under test;

a balance positioned within the compartment to measure a substance under test;

a stanchion positioned within the fume hood for holding a test animal;

an air shield positioned in front of the exit port of the glove bag and the animal stanchion; and

decontaminating apparatus for cleaning up toxic substance residue comprising a suction hose having an inlet and an outlet, the suction hose inlet positioned within the glove bag and the suction hose outlet coupled to a vacuum source, and further comprising a container of decontaminating solution coupled between the suction hose outlet and the toxic substance filtered vacuum source;

wherein the compartment comprises a glove bag;

wherein the source of non-reactive gas comprises nitrogen;

further comprising means to enhance the visibility of a substance under test.

20. The toxic substance containment and test system of claim 19 wherein the means to enhance the visibility of the substance under test comprises a source of illumination.

21. The toxic substance containment and test system of claim 19 wherein the source of illumination provides light at a wavelength that excites a fluorescent property of the substance under test.

22. The toxic substance containment and test system of claim 21 wherein the fluorescent property of the substance under test is induced by a fluorescent dye.

23. A toxic substance containment and test system, comprising:

a fume hood comprising an air exhaust system and a toxic substance filter;

a compartment positioned within the fume hood, comprising an airtight seal, a pair of glove ports through which an operator can manipulate objects within the compartment, and an exit port for removing a test sample;

a source of a non-reactive gas coupled to the compartment to provide a stable atmosphere within;

an inline moisture trap coupled to the source of non-reactive gas to dry the non-reactive gas;

an ion neutralizer coupled to the source of non-reactive gas to reduce static charges within the compartment;

a staging area in the compartment for preparing a sample under test;

a balance positioned within the compartment to measure a substance under test;

and

a stanchion positioned within the fume hood for holding a test animal.